

1 What is claimed is:

2 1. An apparatus for sealing a vacuum chamber comprising:

3 a plurality of long stroke cylinders with a plurality of first piston rods for moving a  
 4 frame elevator;  
 5 a frame elevator mounting the first piston rods, guide stems and at least a short stroke  
 6 cylinder, wherein another end of each first piston rod is enclosed by the long stroke  
 7 cylinders for linearly moving the frame elevator along a fixed direction, there is a  
 8 support frame connected at the other ends of the guide stems, each short stroke  
 9 cylinder enclosed one end of a second piston rod, the second piston rod is parallel to  
 10 the guide stems and the first piston rods for moving along a parallel direction of the  
 11 guide stems, each second piston rod connects through at least a lever, at least a  
 12 transmitting rod and a connecting rod connected, the lever has a support axis close to  
 13 the transmitting rod, the support axis is pivoted on the support frame, one end of each  
 14 lever is pivoted with the second piston rod and the other end of the lever is pivoted  
 15 with the transmitting rod, each transmitting rod is pivoted with the middle of the  
 16 connecting rod, the two ends of each connecting rods pivoted with at least a  
 17 direction-changing mechanism respectively; and  
 18 a door pivoting with the direction-changing mechanisms;  
 19 when the long stroke cylinders moving the frame elevator to the predetermined  
 20 position, the short stroke cylinder through the second piston rods, transmitting rods,  
 21 levers and connecting rods moves the direction-changing mechanisms to make the  
 22 door linearly move to the vacuum chamber for sealing the vacuum chamber.

23 2. An apparatus for sealing a vacuum chamber in accordance with claim 1, wherein each  
 24 direction-changing mechanism comprises a sliding block, a support block and a  
 25 mounting block, the mounting blocks are mounted on the door, the first ends of the  
 26 sliding blocks are pivoted with the connecting rods by pivot axes, each pivot axis of  
 27 the sliding block moves in the corresponding narrow opening on the support frame,

1 the second ends of the sliding blocks are pivoted with the mounting blocks mounted  
2 on the door, the middles of the slide blocks are pivoted with the support blocks, and  
3 the other ends of the support blocks are pivoted with the support frame.

4 3. An apparatus for sealing a vacuum chamber in accordance with claim 1, wherein the  
5 support frame includes a fixed across bar for pivoting with the support axis of the  
6 lever.

7 4. An apparatus for sealing a vacuum chamber in accordance with claim 1, further  
8 comprising a ring cushion on the door.

9 5. An apparatus for sealing a vacuum chamber in accordance with claim 1, further  
10 comprising a push rod and two second transmitting rods pivoted with the two ends of  
11 the push rod between the second piston rod and the levers, wherein the middle of the  
12 push rod is pivoted with the second piston rod, and the second transmitting rods are  
13 pivoted with the ends of the levers.

14 6. An apparatus for sealing a vacuum chamber comprising:

15 a flat shell having an opening;

16 a door fitted in the shell, the door mounting a plurality of direction-changing  
17 mechanisms;

18 a sealing mechanism including a frame elevator, a support frame and guide stems for  
19 fixedly connecting with the frame elevator and the support frame, wherein at least a  
20 short stroke cylinder having a second piston rod is fitted on the frame elevator for  
21 moving the second piston rod to the predetermined point, the second piston rod drives  
22 at least a lever, a transmitting rod and a connecting rod, the support axis of the lever is  
23 pivoted on the support frame, the transmitting rod connects with the lever and the  
24 middle of the connecting rod, the two ends of the connecting rod are pivoted with the  
25 direction-changing mechanisms respectively for moving the door to the opening of  
26 the shell; and

27 an elevating mechanism including a plurality of long stroke cylinders with first piston

- 1 rods, wherein the first piston rods connect the frame elevator, the long stroke  
2 cylinders drive the first piston rods to the predetermined points for vertically moving  
3 the door and the sealing mechanism, and the first piston rods are parallel to the  
4 second piston rod.
- 5 7. An apparatus for sealing a vacuum chamber in accordance with claim 6, wherein the  
6 shell has a guide plate for passing through the guide stems and the second piston rod.
- 7 8. An apparatus for sealing a vacuum chamber in accordance with claim 6, wherein each  
8 direction-changing mechanism includes a sliding block, a support block and a  
9 mounting block, wherein the mounting block is mounted on the door, the first end of  
10 the sliding block is pivoted with the connecting rod, the second end of the sliding  
11 block is pivoted with the mounting block, the middle of the slide block is pivoted  
12 with the support block, and the other end of the support block is pivoted with the  
13 support frame.
- 14 9. An apparatus for sealing a vacuum chamber in accordance with claim 8, wherein the  
15 support frame has a plurality of narrow openings for offering the moving spaces of  
16 pivot axes at the first ends of the sliding blocks.
- 17 10. An apparatus for sealing a vacuum chamber in accordance with claim 6, wherein the  
18 support frame includes a fixed across bar for pivoting the lever.
- 19 11. An apparatus for sealing a vacuum chamber in accordance with claim 6, wherein a  
20 ring cushion is fitted on the door.
- 21 12. An apparatus for sealing a vacuum chamber in accordance with claim 6, further  
22 comprising a push rod and two second transmitting rods pivoting the two ends of the  
23 push rod between the second piston rod and the levers, wherein the middle of the  
24 push rod is pivoted with the second piston rod and the second transmitting rods are  
25 pivoted with the ends of the levers.
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